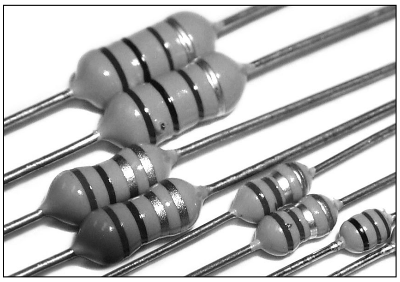
LEADED INDUCTORS

■ OPERATING TEMP	-25 ~ +85℃ (Including self-generated heat)



■ FEATURES

- ABCO Axial inductor is wire wound on the fewite core.
- Extremely reliable inductors that are ideal for signal and power line applications
- Highly efficient automated production processes can provide high quality inductors in large volumes.

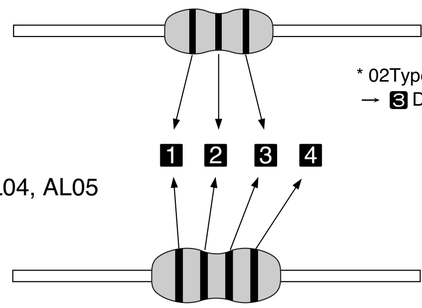
■ APPLICATION

- Consumer electronics (such as VCRs, TVs, audio, equipment, general electronic appliances.)

A	L	03	T	R22	K
1	2	3	4	5	6

■ MARKING

- AL02, ALN02, ALC02
- AL03, AL04, AL05



* 02Type J Tolerance
→ 3 Digit with coding

■ ORDERING CODE

1 Part name	
A	Axial Inductor

2 Characteristics	
L	Standard Type
N, C	High Current Type

3 Body Size (D×L)[㎜]	
02	2.5×3.4(AL, ALC)
	2.5×3.7(ALN)
03	3.0×7.0
04	4.2×9.8
05	4.5×14.0

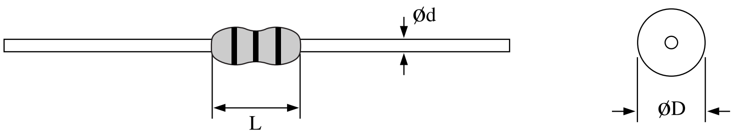
4 Taping Configurations	
TA	Axial lead(26mm lead space) /ammo pack(02/03type)
TB	Axial lead(52mm lead space) /ammo pack(all type)
TR	Axial lead Reel pack (all type)

5 Nominal Inductance[μH]	
R22	0.22
1R5	1.5
120	12

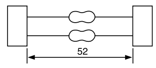
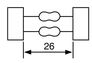
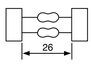
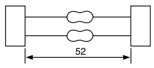
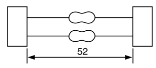
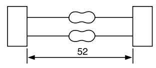
6 Inductance Tolerance[%]	
J	±5
K	±10
M	±20

Color	Inductance[μH]			
	1st Digit	2nd Digit	Multiplier	Tolerance
	1	2	3	4
Black	0		×1	±20%
Brown	1		×10	-
Red	2		×100	-
Orange	3		×1000	-
Yellow	4		-	-
Green	5		-	-
Blue	6		-	-
Purple	7		-	-
Grey	8		-	-
White	9		-	-
Gold	-		×0.1	±5%
Silver	-		×0.01	±10%

■ APPERANCE DIMENSIONS

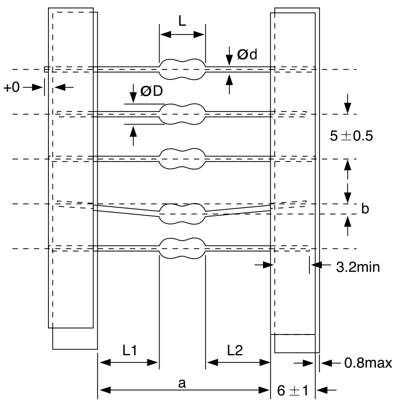


Unit: mm

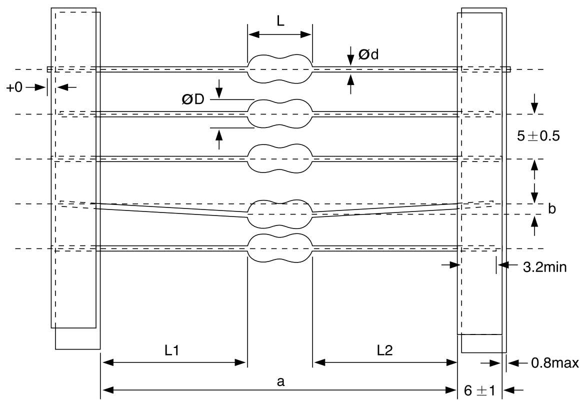
Type	Dimensions			Taped
	L	ØD	Ød	Straight
AL02, ALC02	3.4max.	2.5max.	0.5 ± 0.05	TB 
ALN02	3.7max.	2.5max.		
AL02, ALC02	3.4max.	2.5max.	0.45 ± 0.05	TA 
ALN02	3.7max.	2.5max.		
AL03	7.0max.	3.0max.	0.5 ± 0.05	TA  TB 
AL04	9.8max.	4.2max.	0.65 ± 0.05	TB 
AL05	14.0max.	4.5max.	0.65 ± 0.05	TB 

■ SHAPE DIMENSIONS

- TA(26mm)



- TB(52mm)



Unit: mm

Type	ØD	L	a	b	|L1-L2|	Ød	Pitch Minimum insertion pitch
AL02 ALC02	2.5max.	3.4max.	$26^{+0.5}_{-0}$	0.8max.	0.5max.	0.45 ± 0.05	5.0
ALN02	2.5max.	3.7max.	$26^{+0.5}_{-0}$	0.8max.	0.5max.	0.45 ± 0.05	5.0
AL03	3.0max.	7.0max.	$26^{+1}_{-0.5}$	0.8max.	1.0max.	0.50 ± 0.05	10.0

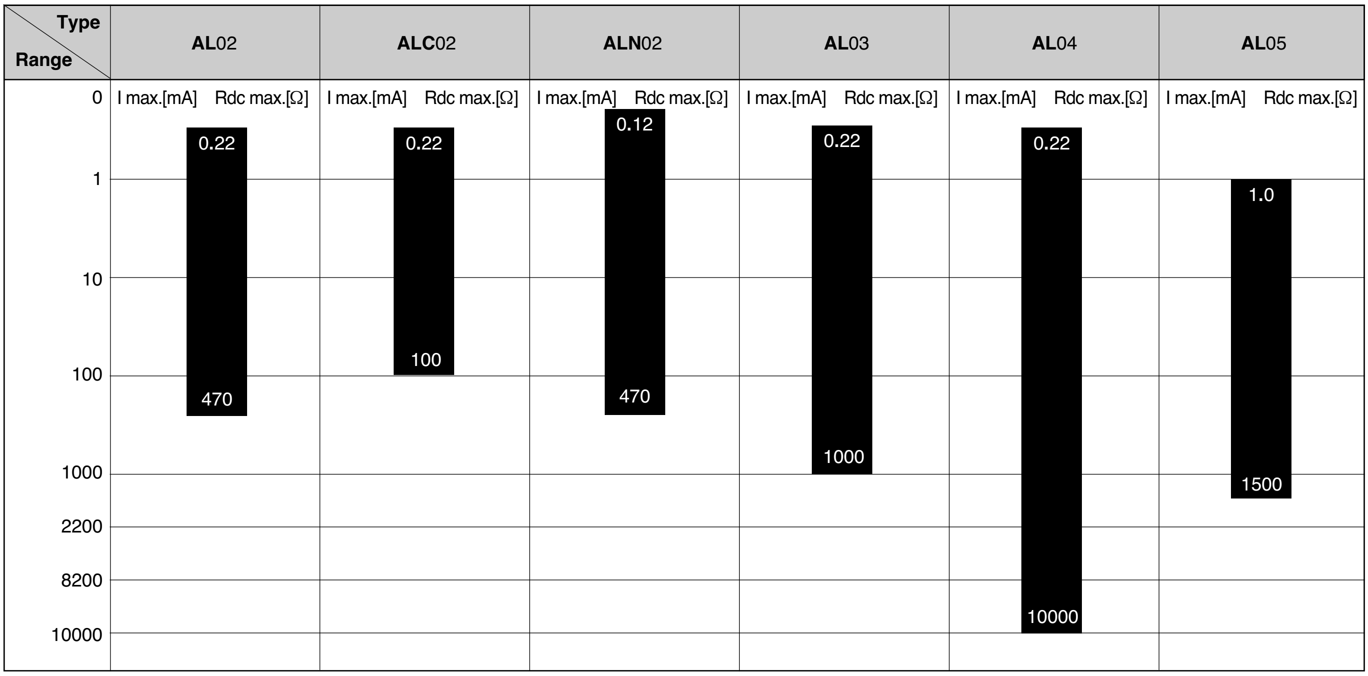
(Columns ØD through Ød are under "Dimensions".)

Unit: mm

Type	ØD	L	a	b	|L1-L2|	Ød	Pitch Minimum insertion pitch
AL02 ALC02	2.5max.	3.4max.	52^{+2}_{-1}	1.2max.	1.0max.	0.50 ± 0.05	5.0
ALN02	2.5max.	3.7max.	52^{+2}_{-1}	1.2max.	1.0max.	0.50 ± 0.05	7.5
AL03	3.0max.	7.0max.	52^{+2}_{-1}	1.2max.	1.0max.	0.50 ± 0.05	10.0
AL04	4.2max.	9.8max.	52^{+2}_{-1}	1.2max.	1.0max.	0.65 ± 0.05	12.5
AL05	4.5max.	14.0max.	52 +2	1.2max.	1.0max.	0.50 ± 0.05	20.0

(Columns ØD through Ød are under "Dimensions".)

AVAILABLE INDUCTANCE RANGE



● Examples

Inductance	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]
1 μH	270	0.8	510	0.4	500	0.32	270	0.8	920	0.19	5600	0.022
10 μH	160	2.3	270	1.4	280	1.0	160	2.3	500	0.58	2100	0.062
100 μH	44	12	105	9.1	120	5.6	90	7.0	275	1.80	700	0.480
1000 μH	-		-		-		40	33.0	100	14.0	240	5.800
2200 μH	-		-		-		-		80	40.0	-	
8200 μH	-		-		-		-		45	116.0	-	
10000 μH	-		-		-		-		35	148.0	-	

ITEM PART NUMBERS

●AL02

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
AL02T○R22K	0.22	± 10% (± 5%)	35	25.2	410	0.40	400
AL02T○R27K	0.27				410	0.43	380
AL02T○R33K	0.33				360	0.48	370
AL02T○R39K	0.39				300	0.51	350
AL02T○R47K	0.47				230	0.56	330
AL02T○R56K	0.56				210	0.61	320
AL02T○R68K	0.68				190	0.67	310
AL02T○R82K	0.82				170	0.74	290
AL02T○1R0K	1.0				150	0.80	270
AL02T○1R2K	1.2		40	7.96	110	0.90	260
AL02T○1R5K	1.5				80	1.0	250
AL02T○1R8K	1.8				60	1.1	240
AL02T○2R2K	2.2				45	1.2	230
AL02T○2R7K	2.7				40	1.3	220
AL02T○3R3K	3.3				38	1.4	210
AL02T○3R9K	3.9				35	1.6	200
AL02T○4R7K	4.7				32	1.7	190
AL02T○5R6K	5.6				30	1.9	180
AL02T○6R8K	6.8				28	2.0	175
AL02T○8R2K	8.2				26	2.2	165
AL02T○100K	10				24	2.3	160
AL02T○120K	12			2.52	22	2.5	150
AL02T○150K	15				20	2.8	145
AL02T○180K	18				18	3.1	140
AL02T○220K	22				17	3.4	130
AL02T○270K	27				16	4.3	80
AL02T○330K	33				14	4.7	76
AL02T○390K	39				13	5.2	74
AL02T○470K	47				12	5.8	70
AL02T○560K	56				11	6.4	68
AL02T○680K	68				10	7.2	64
AL02T○820K	82				9.5	11	46
AL02T○101K	100				9.0	12	44
AL02T○121K	120			0.796	8.0	13	42
AL02T○151K	150				6.0	16	39
AL02T○181K	180				5.5	18	37
AL02T○221K	220				5.0	20	35
AL02T○271K	270				4.6	26	28
AL02T○331K	330				4.4	27	26
AL02T○391K	390				4.1	28	25
AL02T○471K	470				3.7	30	24

*please specify the taping configuration code.
*○: A, B, R

LEADED INDUCTORS

ITEM PART NUMBERS

● ALC02

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
ALC02T○R22K	0.22	10%	50	25.2	450	0.2	730
ALC02T○R27K	0.27				400	0.21	700
ALC02T○R33K	0.33				350	0.23	670
ALC02T○R39K	0.39				320	0.25	640
ALC02T○R47K	0.47				300	0.27	620
ALC02T○R56K	0.56				280	0.3	590
ALC02T○R68K	0.68				240	0.33	570
ALC02T○R82K	0.82				210	0.35	540
ALC02T○1R0K	1				190	0.4	510
ALC02T○1R2J	1.2	5%		7.96	110	0.43	490
ALC02T○1R5J	1.5				80	0.48	460
ALC02T○1R8J	1.8				70	0.53	440
ALC02T○2R2J	2.2				60	0.6	420
ALC02T○2R7J	2.7				55	0.68	390
ALC02T○3R3J	3.3				50	0.75	370
ALC02T○3R9J	3.9				45	0.83	350
ALC02T○4R7J	4.7		40		40	0.91	340
ALC02T○5R6J	5.6				35	1	320
ALC02T○6R8J	6.8				30	1.1	300
ALC02T○8R2J	8.2		35		26	1.3	290
ALC02T○100J	10				24	1.4	270
ALC02T○120J	12		40	2.52	22	1.4	270
ALC02T○150J	15				20	1.6	260
ALC02T○180J	18				18	1.7	250
ALC02T○220J	22				17	1.9	230
ALC02T○270J	27		40		16	2.5	200
ALC02T○330J	33				14	3.4	180
ALC02T○390J	39				13	3.6	170
ALC02T○470J	47				12	4.6	150
ALC02T○560J	56				11	5.1	140
ALC02T○680J	68				10	5.6	130
ALC02T○820J	82				9.5	7.9	115
ALC02T○101J	100				9	9.1	105

*please specify the taping configuration code.
*○: A, B, R

● ALN02

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
ALN02T○R12K	0.12	± 10% (± 5%)	50	25.2	500	0.12	850
ALN02T○R15K	0.15				500	0.14	800
ALN02T○R18K	0.18				500	0.15	760
ALN02T○R22K	0.22				500	0.16	730
ALN02T○R27K	0.27				500	0.18	690
ALN02T○R33K	0.33				480	0.19	660
ALN02T○R39K	0.39				430	0.21	640
ALN02T○R47K	0.47				380	0.23	610
ALN02T○R56K	0.56				350	0.25	580
ALN02T○R68K	0.68				310	0.27	550
ALN02T○R82K	0.82				270	0.29	520
ALN02T○1R0K	1.0				240	0.32	500
ALN02T○1R2K	1.2			7.96	210	0.35	480
ALN02T○1R5K	1.5				190	0.38	450
ALN02T○1R8K	1.8				140	0.42	430
ALN02T○2R2K	2.2				90	0.47	410
ALN02T○2R7K	2.7				70	0.52	390
ALN02T○3R3K	3.3				50	0.57	370
ALN02T○3R9K	3.9		40		35	0.63	360
ALN02T○4R7K	4.7				32	0.69	340
ALN02T○5R6K	5.6				30	0.75	320
ALN02T○6R8K	6.8				28	0.84	310
ALN02T○8R2K	8.2				26	0.92	290
ALN02T○100K	10				24	1.0	280
ALN02T○120K	12			2.52	22	1.0	280
ALN02T○150K	15				20	1.2	265
ALN02T○180K	18				18	1.3	250
ALN02T○220K	22				17	1.5	235
ALN02T○270K	27				15	1.7	220
ALN02T○330K	33		50		14	2.2	180
ALN02T○390K	39				13	2.4	170
ALN02T○470K	47				12	2.8	160
ALN02T○560K	56				10	4.1	140
ALN02T○680K	68				9.2	4.5	130
ALN02T○820K	82				8.8	5.0	125
ALN02T○101K	100				8.0	5.6	120
ALN02T○121K	120			0.796	6.6	9.2	90
ALN02T○151K	150				5.8	10.5	85
ALN02T○181K	180				5.4	11.5	80
ALN02T○221K	220				4.8	13.0	75
ALN02T○271K	270				3.6	16.0	70
ALN02T○331K	330				3.4	18.0	66
ALN02T○391K	390				3.2	20.0	63
ALN02T○471K	470				3.0	22.0	60

*please specify the taping configuration code.
*○: A, B, R

ITEM PART NUMBERS

● AL03

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
AL03T○R22K	0.22	± 10% (± 5%)	35	25.2	450	0.40	400
AL03T○R27K	0.27				410	0.43	380
AL03T○R33K	0.33				360	0.48	370
AL03T○R39K	0.39				300	0.51	350
AL03T○R47K	0.47				230	0.56	330
AL03T○R56K	0.56		40		210	0.61	320
AL03T○R68K	0.68				190	0.67	310
AL03T○R82K	0.82				170	0.74	290
AL03T○1R0K	1.0				150	0.80	270
AL03T○1R2K	1.2		50	7.96	144	0.90	260
AL03T○1R5K	1.5				131	1.0	250
AL03T○1R8K	1.8				121	1.1	240
AL03T○2R2K	2.2				110	1.2	230
AL03T○2R7K	2.7				100	1.3	220
AL03T○3R3K	3.3				94	1.4	210
AL03T○3R9K	3.9				65	1.6	200
AL03T○4R7K	4.7				56	1.7	190
AL03T○5R6K	5.6				48	1.9	180
AL03T○6R8K	6.8				37	2.0	175
AL03T○8R2K	8.2				25	2.2	165
AL03T○100K	10				21	2.3	160
AL03T○120K	12			2.52	19	2.5	150
AL03T○150K	15				17	2.8	145
AL03T○180K	18				13	3.1	140
AL03T○220K	22				9.6	3.4	130
AL03T○270K	27				7.2	3.8	125
AL03T○330K	33				6.3	4.1	120
AL03T○390K	39				6.3	4.5	115
AL03T○470K	47				6.3	4.9	110
AL03T○560K	56				6.2	5.3	105
AL03T○680K	68				5.7	5.8	100
AL03T○820K	82				5.3	6.3	95
AL03T○101K	100				4.8	7.0	90
AL03T○121K	120			0.796	3.8	13	90
AL03T○151K	150				3.5	15	85
AL03T○181K	180				3.3	16	80
AL03T○221K	220				3.0	17	75
AL03T○271K	270				2.8	19	65
AL03T○331K	330				2.6	20	60
AL03T○391K	390				2.4	22	55
AL03T○471K	470				2.25	24	55
AL03T○561K	560				2.10	26	50
AL03T○681K	680				1.95	28	45
AL03T○821K	820				1.85	30	40
AL03T○102K	1000				1.40	33	40

*please specify the taping configuration code.
*○: A, B, R

● AL04

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rated Current [mA] (max.)
AL04T○R22K	0.22	± 10% (± 5%)	45	25.2	300	0.10	1400
AL04T○R27K	0.27				270	0.11	1320
AL04T○R33K	0.33				250	0.12	1280
AL04T○R39K	0.39				230	0.13	1200
AL04T○R47K	0.47				220	0.14	1150
AL04T○R56K	0.56				200	0.15	1100
AL04T○R68K	0.68				190	0.16	1030
AL04T○R82K	0.82				172	0.17	980
AL04T○1R0K	1.0				157	0.19	920
AL04T○1R2K	1.2		50	7.96	144	0.21	880
AL04T○1R5K	1.5				131	0.23	830
AL04T○1R8K	1.8		55		121	0.25	790
AL04T○2R2K	2.2				110	0.28	750
AL04T○2R7K	2.7		60		100	0.30	720
AL04T○3R3K	3.3		65		94	0.34	670
AL04T○3R9K	3.9				65	0.37	640
AL04T○4R7K	4.7		70		56	0.39	620
AL04T○5R6K	5.6				48	0.43	590
AL04T○6R8K	6.8		75		37	0.48	550
AL04T○8R2K	8.2		80		25	0.52	530
AL04T○100K	10		65		21	0.58	500
AL04T○120K	12		50	2.52	19	0.63	480
AL04T○150K	15				17	0.72	460
AL04T○180K	18				13	0.77	430
AL04T○220K	22				9.6	0.84	410
AL04T○270K	27		55		7.2	0.94	390
AL04T○330K	33				6.3	1.03	370
AL04T○390K	39		50		6.3	1.12	350
AL04T○470K	47		45		6.3	1.22	340
AL04T○560K	56		40		6.2	1.34	320
AL04T○680K	68				5.7	1.47	305
AL04T○820K	82		35		5.3	1.62	290
AL04T○101K	100		30		4.8	1.80	275
AL04T○121K	120		55	0.796	3.8	3.70	185
AL04T○151K	150		45		3.5	4.20	175
AL04T○181K	180		50		3.3	4.60	165
AL04T○221K	220		55		3.0	5.10	155
AL04T○271K	270		65		2.8	5.80	145
AL04T○331K	330				2.6	6.40	137
AL04T○391K	390				2.4	7.00	133
AL04T○471K	470		60		2.25	7.70	126
AL04T○561K	560				2.10	8.50	120
AL04T○681K	680		55		1.95	9.40	113
AL04T○821K	820				1.85	10.5	105
AL04T○102K	1000		50		1.40	14.0	100
AL04T○122K	1200		50	0.252	1.20	22.0	110
AL04T○152K	1500				1.10	25.0	100
AL04T○182K	1800				0.98	28.0	90
AL04T○222K	2200				0.90	40.0	80
AL04T○272K	2700				0.85	44.0	70
AL04T○332K	3300				0.81	50.0	70
AL04T○392K	3900		40		0.72	63.0	60
AL04T○472K	4700				0.60	69.0	55
AL04T○562K	5600				0.55	77.0	50
AL04T○682K	6800				0.50	104.0	45
AL04T○822K	8200				0.48	116.0	45
AL04T○103K	10000		30		0.40	148.0	35

*please specify the taping configuration code.
*○: A, B, R

ITEM PART NUMBERS

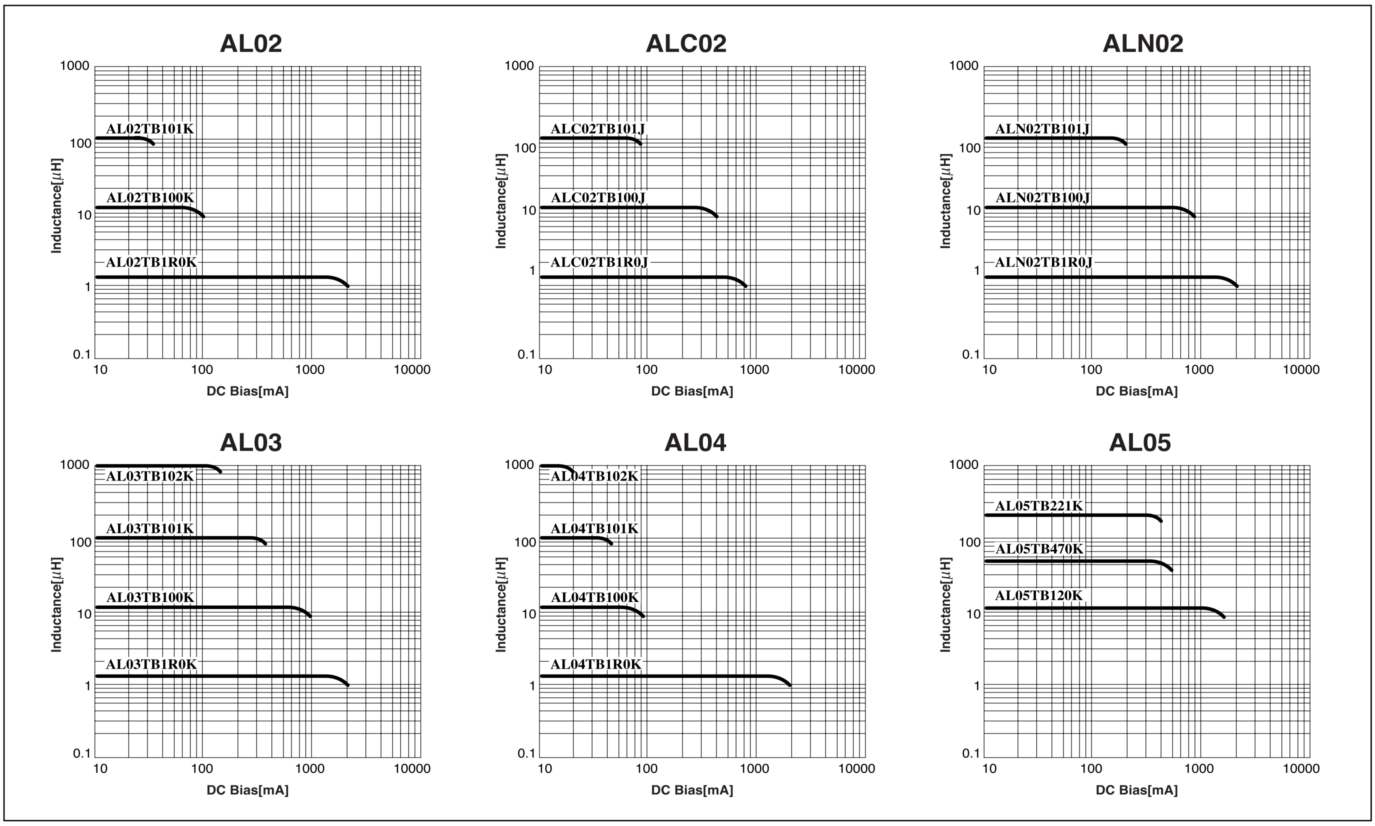
● AL05

Ordering Code	Inductance [μH]	Inductanced Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
AL05T○1R0K	1.0	± 10%	10	7.96	300	0.022	5600
AL05T○1R2K	1.2				260	0.024	5500
AL05T○1R5K	1.5				250	0.026	5000
AL05T○1R8K	1.8				240	0.029	4700
AL05T○2R2K	2.2				220	0.031	4500
AL05T○2R7K	2.7				195	0.034	4000
AL05T○3R3K	3.3				155	0.038	3400
AL05T○3R9K	3.9				115	0.040	3100
AL05T○4R7K	4.7				85	0.044	2800
AL05T○5R6K	5.6				55	0.048	2600
AL05T○6R8K	6.8				50	0.051	2400
AL05T○8R2K	8.2				38	0.056	2200
AL05T○100K	10				24	0.062	2100
AL05T○120K	12			2.52	18	0.076	1800
AL05T○150K	15				16	0.088	1700
AL05T○180K	18				15	0.110	1600
AL05T○220K	22				14	0.130	1400
AL05T○270K	27				13	0.140	1300
AL05T○330K	33				11	0.200	1200
AL05T○390K	39				10	0.220	1100
AL05T○430K	43				9.5	0.280	1000
AL05T○470K	47				9.5	0.280	1000
AL05T○560K	56				8.0	0.300	900
AL05T○680K	68				7.5	0.340	800
AL05T○820K	82				7.0	0.385	700
AL05T○101K	100				6.5	0.480	700
AL05T○121K	120		15	0.796	5.0	0.595	600
AL05T○151K	150				4.5	0.900	550
AL05T○181K	180				4.0	1.10	500
AL05T○221K	220				3.8	1.25	440
AL05T○271K	270				3.5	1.85	420
AL05T○331K	330				3.0	2.10	380
AL05T○391K	390				2.8	2.28	340
AL05T○471K	470				2.5	3.22	320
AL05T○561K	560				2.2	3.85	290
AL05T○681K	680				2.1	4.00	260
AL05T○821K	820				2.0	5.00	250
AL05T○102K	1000				1.8	5.80	240
AL05T○122K	1200			0.252	1.6	7.10	200
AL05T○152K	1500				1.5	7.80	190

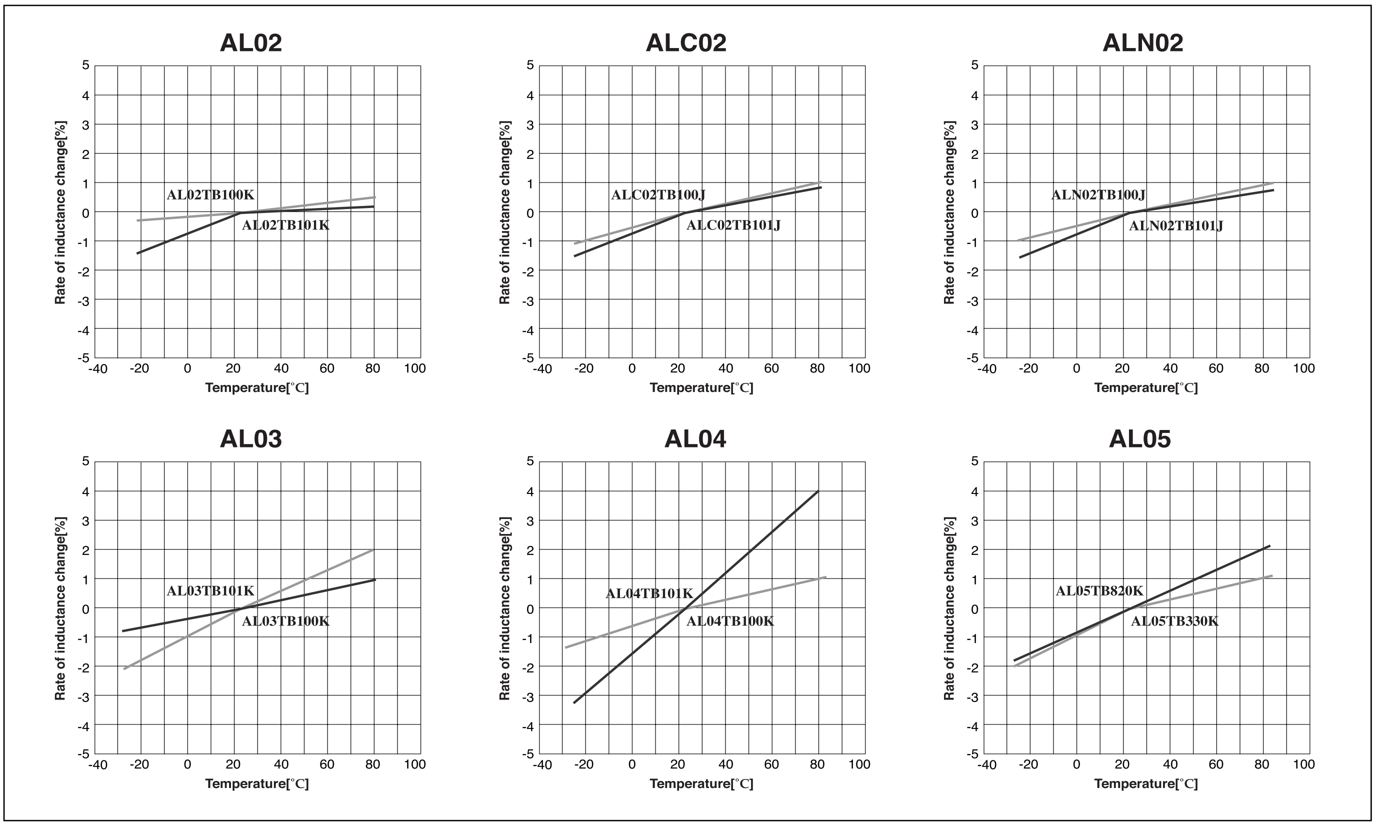
*please specify the taping configuration code.
*○: A, B, R

ELECTRICAL CHARACTERISTICS

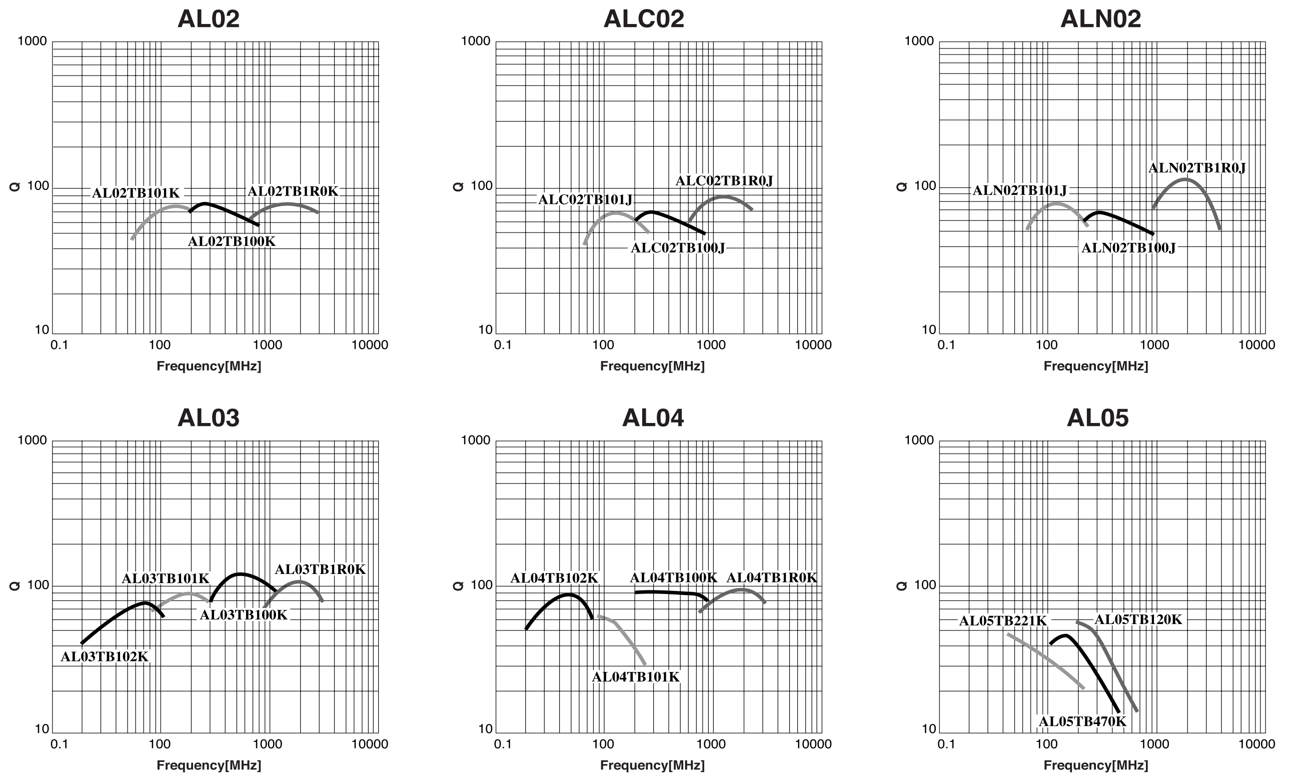
● DC Bias Characteristics (Measured by HP4284A + HP42841A)



●Temperature Characteristics(Measured by HP4284A + HP42841A)



● Q-Characteristics(Measured by HP 4285A + HP 42851A)



RELIABILITY

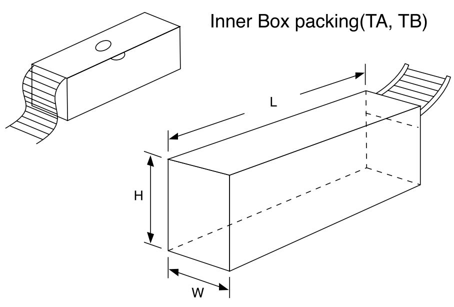
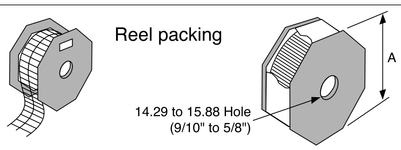
<table>
<tr><th rowspan="2" colspan="2">Item</th><th colspan="3">Specified Value</th><th rowspan="2">Test Methods and Remarks</th></tr>
<tr><th>AL02, AL03 Type</th><th>AL04 Type</th><th>AL05 Type</th></tr>
<tr><td colspan="2">1. Operating Temperature Range</td><td colspan="3">-25 ~ +85˚C</td><td>Including self-generated heat.</td></tr>
<tr><td colspan="2">2. Storage Temperature Range</td><td colspan="3">-40 ~ +85˚C</td><td></td></tr>
<tr><td colspan="2">3. Q</td><td colspan="3">Within the specified tolerance</td><td>Measuring equipment: LCR meter(HP4285A+42851A or its equivalent)
Measuring frequency: Specified frequency</td></tr>
<tr><td colspan="2">4. Self Resonant Frequency</td><td colspan="3">Within the specified tolerance</td><td>Measuring equipment:
(Dip meter or its equivalent)</td></tr>
<tr><td colspan="2">5. DC Resistance</td><td colspan="3">Within the specified tolerance</td><td>Measuring equipment: m+J80Ω Hi Tester(3226 or its equivalent)</td></tr>
<tr><td colspan="2">6. DC Bias Characteristics</td><td colspan="3">ΔL/L → Within -10%</td><td>Measure inductance with application of rated current using LCR meter to compare it with the initial value.</td></tr>
<tr><td colspan="2">7. Temperature Characteristics</td><td colspan="3">ΔL/L → Within ±5%</td><td>Change of maximum inductance deviation in step 1 to 5
<table>
<tr><th>Step</th><th>Temperature(˚C)</th></tr>
<tr><td>1</td><td>20</td></tr>
<tr><td>2</td><td>-25 (Minimum operating temperature)</td></tr>
<tr><td>3</td><td>20 (Reference temperature)</td></tr>
<tr><td>4</td><td>+85 (Maximum operating temperature)</td></tr>
<tr><td>5</td><td>20</td></tr>
</table></td></tr>
<tr><td colspan="2">8. Inductance</td><td colspan="3">Within the Specified tolerance</td><td>Measuring equipment: LCR meter (HP4285A+42851A or its equivalent)
Measuring frequency: Specified frequency</td></tr>
<tr><td colspan="2">9. Rated Current</td><td colspan="3">Within the specified tolerance</td><td>The maximum DC value having inductance decrease within 10% and temperature increase within 20˚C by the application of DC bias</td></tr>
<tr><td rowspan="2">10.Terminal Strength</td><td>Tensile</td><td colspan="3">No abnormality such as cutoff or looseness of lead</td><td>Apply the stated tensile force progressively in the direction to draw terminal
<table>
<tr><th>Nominal wire diameter(mm)</th><th>Tensile force(N)</th><th>Duration(S)</th></tr>
<tr><td>0.43<Ød ≤0.65</td><td>25</td><td>5</td></tr>
</table></td></tr>
<tr><td>Bending</td><td colspan="3">No abnormality such as cutoff or looseness of lead</td><td>Suspend a mass at the terminal, incline the body through angle of 90˚ and return it to intial position is This operation is done over a period of 2~3 sec. Then a second bend in the opposite direction shall be made.
Number of bends: Two times
<table>
<tr><th>Nominal wire diameter(mm)</th><th>Bending force(N)</th><th>Mass weight(kg)</th></tr>
<tr><td>0.3<Ød ≤0.5</td><td>2.5</td><td>0.25</td></tr>
<tr><td>0.5<Ød ≤0.8</td><td>5</td><td>0.5</td></tr>
</table></td></tr>
<tr><td colspan="2">11. Body Strength</td><td colspan="3">No abnormality such as damage</td><td>AL02
Applied force: 30N
Duration: 10 sec.
Speed: Shall attain to specified force in 2 sec.
AL03, 04, 05
Applied force: 50N
Duration: 10 sec.
Speed: Shall attain to specified force in 2 sec.</td></tr>
<tr><td colspan="2">12. Resistance to vibration</td><td>ΔL/L → Within ±5%
Q → 30 min.</td><td>ΔL/L → Within ±5%
Q/Q → Within ±10%</td><td>ΔL/L → Within ±5%
Q → 15 min.</td><td>According to JIS C 5102 clause 8.2
Vibration type: A
Duration: 2 hrs each in X, Y and Z directions Total: 6 hrs
Frequency range: 10 to 55 to 10 Hz(1min.)
Amplitude: 1.5 mm
Mountiong method: Soldering onto printed board
Recovery: At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs.</td></tr>
<tr><td colspan="2">13. Resistance to Shock</td><td>No significant abnormality in appearance</td><td>No significant abnormality in appearance</td><td>No significant abnormality in appearance</td><td>Drop test
impact materal: Concrete of vinyl tile
Height: 1m
Total number of drops: 10 times</td></tr>
<tr><td colspan="2">14. Solderability</td><td colspan="3">At least 75% of terminal electrode is covered by new solder</td><td>Solder temperature: 230 ± 5˚C
Duration: 3 ± 0.5 sec.</td></tr>
<tr><td colspan="2">15. Resistance to Soldering Heat</td><td>No significant abnormality in appearance</td><td>No significant abnormality in appearance</td><td>ΔL/L → Within ±5%
Q → 15 min.</td><td>Solder temperature: 270 ± 5˚C
Duration: 5 ± 0.5 sec.
Immersed conditions: inserted into substrate with t = 1.6 mm
Recovery: At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs.</td></tr>
</table>

RELIABILITY

<table>
<tr><th rowspan="2">Item</th><th colspan="3">Specified Value</th><th rowspan="2">Test Methods and Remarks</th></tr>
<tr><th>AL02, AL03 Type</th><th>AL04 Type</th><th>AL05 Type</th></tr>
<tr><td>16. Resistance to Solvent</td><td colspan="3">Please avoid the ultrasonic cleaning of this product.</td><td></td></tr>
<tr><td>17. Thermal shock</td><td>ΔL/L → Within ±10%
Q → 30min.</td><td>ΔL/L → Within ±10%
Q/Q → Within ±30%</td><td>ΔL/L → Within ±5%
Q → 15min.</td><td>Conditions for 1 cycle<table><tr><th>Step</th><th>Temperature(℃)</th><th>Duration(min)</th></tr><tr><td>1</td><td>-25^{+0}_{-3}</td><td>30 ± 3</td></tr><tr><td>2</td><td>Room temperature</td><td>within 3</td></tr><tr><td>3</td><td>$+85^{+2}_{-0}$</td><td>30 ± 3</td></tr><tr><td>4</td><td>Room temperature</td><td>within 3</td></tr></table>Number of cycles: 5 cycles
Recovery: At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.</td></tr>
<tr><td>18. Damp Heat</td><td>ΔL/L → Within ±10%
Q → 30min.</td><td>ΔL/L → Within ±10%
Q/Q → Within ±30%</td><td>ΔL/L → Within ±5%
Q → 15min.</td><td>- Temperature: 40 ± 2°C - Humidity: 90 to 95% RH
- Duration: 1000hrs
- Recovery: At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.</td></tr>
<tr><td>19. Loading under Tensile Damp Heat</td><td>ΔL/L → Within ±10%
Q → 30min.</td><td>ΔL/L → Within ±10%
Q/Q → Within ±30%</td><td>ΔL/L → Within ±5%
Q → 15min.</td><td>- Temperature: 40 ± 2°C - Humidity: 90 to 95% RH
- Duration: 1000hrs - Applied current: Rated current
- Recovery: At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.</td></tr>
<tr><td>20. Loading at High Temperature</td><td>ΔL/L → Within ±10%
Q → 30min.</td><td>ΔL/L → Within ±10%
Q/Q → Within ±30%</td><td>ΔL/L → Within ±5%
Q → 15min.</td><td>- Temperature: 85 ± 2°C - Duration: 1000hrs
- Applied current: Rated current
- Recovery: At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.</td></tr>
<tr><td>21. Low Temperature Life Test</td><td>ΔL/L → Within ±10%
Q → 30min.</td><td>ΔL/L → Within ±10%
Q/Q → Within ±30%</td><td>ΔL/L → Within ±5%
Q → 15min.</td><td>- Temperature: -25 ± 2°C - Duration: 1000hrs
- Applied current: Rated current
- Recovery: At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.</td></tr>
</table>

Note on standard condition: “standard condition” referred to herein is defined as follows.
5 to 35℃ of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.
When there are questions concerning measurement results: In order to provide correlation data, the test shall be conducted under condition of 20±2℃ of temperatue, 45 to 85% relative humidity and 86 to 106kPa of air pressure Unless otherwise specified, all the tests are conducted under the “standard condition”

■ PACKING

Type		Taping Lead Style	Inner Box Size(m/m) (W × H ×L)	Inner Box Quantity	Out Box Size(m/m) (W × H ×L)	Out Box Quantity	Weight (100μH)	Item
	TA	26m/m	50×65×252	2,000	285×260×455	54,000	8.5kg	AL02
								ALC02
							9.5kg	ALN02
							11kg	AL03
	TB	52m/m	70×65×265	2,500	285×250×455	45,000	6kg	AL02
								ALC02, ALN02
			70×85×265	2,500	285×305×455		7kg	AL03
			70×110×355	2,500	330×260×485	30,000	6kg	AL04
			70×110×355	2,000		24,000	10kg	AL05
	TR	52m/m	280×280 (A×A)	5,000	460×320×600	50,000	14kg	AL02 ALC02
				4,000		40,000	14kg	AL03
				2,500		25,000	16kg	AL04

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before your order and/or use.